

Editorials

Of Dictators and Czars in Health Care and Elsewhere

IN JUNE OF 1982 the California legislature acted essentially without any public discussion or review to give one person unprecedented authority to negotiate and award contracts to hospitals and other organizations to provide health care for Medi-Cal patients. Medi-Cal is California's name for its Title XIX or Medicaid program. The authority to make contracts appears to be absolute and the negotiations for them have been conducted in secrecy. Things have moved rapidly and many contracts were to become operative on January first.

The scenario that must have occurred seems to have been somewhat as follows: For many reasons, not the least of which has been additional entitlements to Medi-Cal benefits authorized by the legislature over the years, the cost of the program has been rising while the revenues to the state did not keep pace with these and other legislatively mandated expenditures. A crisis occurred when the legislators recognized that the Medi-Cal expenditures had gotten so out of hand that they were seemingly beyond control at a time when the legislature was faced with a constitutional requirement to balance the state budget. In what must have been an atmosphere of legislative desperation, Mr William Guy, a person of reputed knowledge and experience in the financing of health care services, evidently persuaded or was persuaded by the governor and the legislature that if he were given the absolute authority he could solve their problems—that is, reduce the cost of the Medi-Cal program. He was given the authority and is now called the “Medi-Cal czar.” How well the problem is solved remains to be seen.

There has long been a school of thought that when in a free society things get so out of hand as to seem unmanageable, a people will eventually become frustrated and frightened enough to turn to and follow someone who is sufficiently self-confident and charismatic to convince them that he has the answers and can solve the problems if they will just give him the authority and let him do it. Dictators have been created by the legislative process before and have ruled nations. Some of us are old enough to remember when such a process took place in Germany, and more of us are old enough to remember its aftermath. Freedom and the democratic process have been surrendered for what was thought to be certainty or order. To see this happening now, and here, even in one program in health care, gives one pause and certainly much food for thought. Is this really the way we ought to go or want to go in health care, or in the nation for that matter?

—MSMW

Consequences of Nuclear Warfare

THE FALL 1982 ISSUE of *Daedalus*, the journal of the American Academy of Arts and Sciences, concentrates on the subject of “print culture and video culture.” In the preface the editor discusses the “information revolution” of the 20th century. He suggests that there is an “obligation to estimate whether today's information revolution is ‘the event of our age,’ transcending all others, reducing our century's putative major events—including the two world wars, the Russian Revolution, and the rise of Nazism—to local incidents of substantially less cosmic proportions.”

That is one point of view; other people might nominate other great phenomena of our time: air travel, space exploration, despoiling our natural resources, prolongation of the average span of human life from about 45 years in 1900 to about 75 years now and the present growth rate of the world's population.

While these together constitute an argument that our century has witnessed the greatest changes in the history of planet Earth, many of us believe them to be trivial when viewed against the present real possibility of a major war fought with nuclear weapons. As described in this issue of the journal, such a conflict could reduce much of the northern hemisphere to rubble, killing a substantial proportion of the population and destroying governments, order, culture—indeed, the whole fabric of society. Furthermore, the effect of such a conflict on Earth's tenuously balanced ecosystem could threaten to end all life on the planet.

We members of the medical profession cannot ignore such a possibility. As ones whose lives and training are devoted to protecting the health of humankind, we have an obligation to inform ourselves about the facts and to be in a position to help others understand the terrible danger represented by the stockpiling of nuclear warheads in the arsenals of the United States and the Soviet Union, soundless and secret-shrouded.

In recent years organizations such as the Union of Concerned Scientists, the Federation of American Scientists and the National Academy of Sciences have released bulletins that indicate steadily increasing alarm about the possibility and consequences of a nuclear holocaust.

I am convinced this danger is clear and present and do not accept the viewpoint that the medical profession can ignore it, taking refuge in such tired excuses as “It's not our problem; it's too political,” or “Our leaders must know things we can't know,” or “What about the Russians?” or “Better dead than red.”

I believe that members of our profession *can* do something to help bring about a change from the collision course we appear to be on right now. Indeed, at least 15 national medical organizations, including the

American College of Physicians, the American Public Health Association and the Institute of Medicine, have already passed resolutions urging the governments of the two superpowers to spare no effort to extricate themselves from the danger of the nuclear arms race.

Following are some pieces of reading in which I have found invaluable instruction about the nuclear predicament:

Only One Earth—The Care and Maintenance of a Small Planet, written by Ward and Dubos,¹ is an unofficial report from a United Nations Conference on the Human Environment. The authors had input from 150 authorities in many parts of the world. Now about ten years old, the book does not deal exclusively with nuclear war; instead it tells about the interdependence of all living things on our planet, sharing products of the sea, the air and the soil.

The Fate of the Earth by Jonathan Schell² does focus on nuclear arms and nuclear war. Some reviewers have described Schell's book as one of the critical pieces of world literature and another calls it the most important book published in 1982. Schell tends to make his points by repetitions in different phrasing, but the total effect is overpowering.

A recent issue of *Ambio* (Vol. 11, Nos. 2 and 3, Pergamon Press, 1982), a "journal of human environment," is devoted to predictions of the aftermath of a nuclear war. The journal, sponsored by the Royal Swedish Academy of Sciences, draws expert contributors from many nations on both sides of the Iron Curtain. The predictions they make about both the short-term and the secondary effects of a major nuclear exchange are sobering, to say the least.

I shall close this editorial note with a tribute that Walter Cronkite paid to one of the physicians' groups working to prevent nuclear war:

It is not pleasant to look death in the face. But unless we do, we are doomed. No group is as qualified to present the terrible facts as these physicians who, with admirable courage and tenacity, have taken into their hands the formidable task of educating the public, the governments and their military to the inescapable results of the nuclear arms folly. To ignore their passionate presentation is to turn our backs on the most urgent issue of our time.

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REFERENCES

1. Ward B, Dubos R: *Only One Earth—The Care and Maintenance of a Small Planet*. New York, Norton & Co, 1972
2. Schell J: *The Fate of the Earth*. New York, Knopf, 1982

Reassessing Acid-Base Balance in Hypothermia—A Comparative Point of View

HYPOTHERMIA AS AN adjunct to complex surgical procedures has been used with increasing frequency over the past three decades. In the United States each year, over 100,000 patients have a corrective surgical procedure during cardiopulmonary bypass at low body temperature. Advances in the technology of pump oxygenators and materials in conjunction with the high

development of demanding surgical skills and patient management have resulted in remarkable achievements and improving mortality figures. Yet, along with the advantages achieved, hypothermia is accompanied by profound alterations in the physiologic and metabolic states and there may be disturbing alterations in cardiac function and acid-base management problems. In this issue, Dr K. C. Wong presents a brief retrospective of hypothermic procedures and an analysis of the physiology and pharmacology of hypothermia in contemporary settings. This subject is of great interest to comparative physiologists who study the manner in which ectothermic (cold-blooded) animals regulate their internal state as they experience in the course of diurnal and seasonal cycles great variations in body temperature. Conversely, clinicians may find that these lower animals provide patterns of regulation that provoke reassessment of commonly held tenets, particularly in the area of acid-base management.

It has become general practice to apply the acid-base standards of normothermia to hypothermic patients. This is achieved by adjusting gas determinations, such that an arterial carbon dioxide partial pressure (P_{aCO_2}) of around 40 torr and a pH of 7.4 are achieved at all temperatures. These criteria are based on the concern that a high carbon dioxide partial pressure (P_{CO_2}) may be required to assure adequate cerebral blood flow or—*post hoc, ergo propter hoc*—that values of normothermia are appropriate to all thermal conditions. It will be shown below that these criteria result in a state that is quite hypercapnic and acidotic by ectothermic standards. Thus, the comparative findings are in sharp contrast to those typifying a hypothermic patient.

Before discussing ectothermic acid-base patterns and their biochemical consequences, it is useful to examine the behavior of blood in vitro under changing temperature conditions. Rosenthal¹ found that a specimen of blood sealed from the atmosphere will show a change in pH versus temperature ($\Delta pH/^\circ C$) of -0.015 . The slope of pH on temperature is remarkably similar to that of the neutral pH of pure water ($\Delta pH/^\circ C = -0.017$). This parallel behavior led Albery and Lloyd² to predict that blood has a dominant protein buffer that has a pK of 7 and heat of enthalpy of 7 kcal. In assessing the various amino acids that could account for this remarkable behavior, Reeves³ found that only one possessed this property. He has cogently argued that the responsible agent is the imidazole moiety of histidine. Not only does it supply the predicted buffer property, it is present in sufficient concentration to account for the observed pH-temperature slope. It needs emphasis that the slope is preserved across a temperature range *only* under conditions of constant carbon dioxide content of the specimen. This condition prevents titration of imidazole by the bicarbonate system. It is also important to note that in such an in vitro system, the P_{CO_2} of the specimen will vary directly with temperature.

In general practice, a perfusionist attempts to achieve a pH of 7.4 at low temperature. A specimen of cooled arterialized blood is typically analyzed in an electrode